ABSTRACT OF THE DISCLOSURE

A method and apparatus for running a plurality of tests concurrently to obtain data relating to the electrophysiological properties of receptors and channels in biological membranes of test subjects, such as, for example, *Xenopus* oocytes. The invention further provides software for controlling, acquiring, and recording data relating to electrophysiological properties of receptors and channels in biological membranes of test subjects, such as, for example, oocytes. This invention increases the throughput rate for experiments and assays employing receptors and ion channels expressed in biological membranes of test subjects, such as, for example, oocytes. In the case of an oocyte, these receptors and channels may be natively expressed (endogenous), may be placed into the oocyte (exogenous), or may be expressed from other RNA or DNA previously placed into the oocyte (exogenous).

The invention provides a means for a sole researcher to operate a plurality of electrophysiological test stations in the time and space conventionally required by a single electrophysiological test station. The invention automates these stations and provides a means for a sole individual to perform large sets of experiments that would be physically and mentally exhausting in the absence of this invention. In addition, this invention provides efficient database and data analysis software integrated with the data acquisition software, thereby increasing the user's data-handling productivity to keep pace with the augmented data generation capacity.